

Additional file 5. Point of care testing

Author Year, reference Country	Study design Patient population	Size of emergency dept Admission rate	Intervention (I) Control (C)	Outcome	Results Intervention (I) Control (C) Difference (D)	Study quality and relevance Comments
Kendall J et al 1998 [46] England	RCT Random 8-hour periods during 1 year with and without POCT. Total of 210 periods All patients	50 000/year	I: POCT N=860 C: Central lab N=868	Change in management Mortality (in- hospital) LOS Admission rate	I: 6.9% (earlier decision) C: 5.3–8.8% p<0.0001 I: 6.4% C: 5.5% p=0.45 I: 188 minutes C: 193 minutes D: 5 minutes p=0.3 I: 85.2% C: 83.5% p=0.3	Moderate Significant change in management with POCT but no change in mortality, LOS or admission rate
Murray RP et al 1999 [47] Canada	RCT During 5 months with inclusion of those suitable for only POCT-analysis (5% of all pat)	41 000/year	I: POCT N=93 C: Central lab N=87	LOS (all) LOS (discharged)	I: 3 hours 28 minutes C: 4 hours 22 minutes D: 54 minutes p<0.02 I: 3 hours 05 minutes C: 4 hours 17 minutes D: 72 minutes p<0.001	Low Shorter LOS for all patients with POCT Low numbers
Lee-Lewandrowski E et al 2003 [48] USA	Observational study Prospective vs. retrospective control. Before and after intervention	70 000/year	I: POCT (8 am–5 pm) N=316 C: Central lab N=271	TAT LOS	I: 8 minutes C: 59.5 minutes D: 51 minutes p=0.02 I: 347 minutes C: 389 minutes D: 42 minutes	Low Shorter TAT, LOS and increased clinician satisfaction with POCT Low numbers

				Clinician satisfaction	p<0.006 I: 4.3 (of max 5) C: 1.95 p<0.001	
Parvin CA et al 1996 [49] USA	Observational study Prospective w three periods : control – intervention – control.	57 000/year	I: POCT (handheld) during 5 weeks N=1 722 C: Central lab Retro and prospective during 5+3 weeks N=2 918	LOS	I: 209 minutes C: 201 minutes D: - 8 minutes NS	Moderate No change in LOS with POCT 95% of patients in intervention also needed central lab tests
Tsai WW et al 1994 [50] USA	Observational study Prospective analysis of 210 patients during 4 weeks (Monday to Friday) with split samples, one for POCT the other to central lab	Not described	I: POCT N=210 C: Central lab N=210 (same group as intervention group)	TAT Possible earlier intervention	I: 8 minutes SD 6 C: 59 minutes SD 33 D: 51 minutes No other statistics I: 19% C: –	Moderate Shorter TAT and possible earlier intervention with POCT
Singer AJ et al 2008 [51] USA	Observational study Prospective w retrospective control One month before and one month after intervention	75 000/year Admission rate 20%	I: Specified lab for emergency dept analysis located at central lab N=5 635 C: Regular central lab N=5 631	% TAT within 30 minutes LOS	I: 83–98% C: 0.4–81% p<0.001 I: 185 minutes C: 206 minutes D: 21 minutes p<0.001	Moderate Shorter TAT and LOS with POCT

POCT = point of care testing; TAT= Turn-around-time; LOS = length of stay